

RiboCOURSE Spring 2013

From Ribosome structure to bacterial physiology

Introduction

1. Title:	A brief history of ribosome research
Speaker/Responsible:	Måns Ehrenberg
Format:	Lecture
Keywords:	Aim of the course and ribosome research history
Date:	January 21, 2013

Mechanisms of protein synthesis:

2. Title:	Initiation and <i>in vitro</i> translation systems
Speaker/Responsible:	Måns Ehrenberg
Format:	Lecture
Keywords:	Initiation, development of <i>in vitro</i> systems, tRNA selection, accuracy and optimization.
Date:	January 23, 2013

3. Title:	Initiation and <i>in vitro</i> translation systems
Speaker/Responsible:	Måns Ehrenberg
Format:	Seminar
Keywords:	-
Date:	January 28, 2013

4. Title:	Peptidyl transfer; from A-site to P-site
Speaker/Responsible:	Johan Åqvist
Format:	Lecture
Keywords:	Codon reading and catalysis
Date:	February 4, 2013

5. Title:	Translocation and termination
Speaker/Responsible:	Suparna Sanyal
Format:	Lecture
Keywords:	EF-G, GTP hydrolysis, ribosome ratcheting, release factors, stop codon usage.
Date:	February 11, 2013

6. Title:	From structure to function
Speaker/Responsible:	Maria Selmer
Format:	Lecture
Keywords:	
Date:	February 25, 2013

7. Title: **From structure to function**
Speaker/Responsible: Maria Selmer
Format: Seminar
Keywords: Methods to study protein structure. How to critically read a scientific paper.
Date: February 27, 2013

8. Title: **What happens next?**
Speaker/Responsible: Suparna Sanyal
Format: Student seminars
Keywords: Exit-tunnel, folding of nascent chain, chaperones
Date: Mars 4, 2013

Protein synthesis in the bacterial cell

9. Title: **Stringent response**
Speaker/Responsible: Vasili Hauryliuk
Format: Lecture
Keywords:
Date: March 11, 2013

10. Title: **Transcription translation coupling**
Speaker/Responsible: Diarmaid Hughes
Format: Lecture
Keywords: Attenuation control, Rho-dependent termination, RNase E activity
Date: Mars 13, 2013

11. Title: **Systems biology – Modeling life**
Speaker/Responsible: Johan Elf
Format: Lecture
Keywords: Amino acid starvation limitations, RelA activity
Date: March 18, 2013

12. Title: **Single molecule analysis of translation**
Speaker/Responsible: Johan Elf
Format: Lecture
Keywords: Methods for single molecule imaging, ribosome tracking
Date: March 25, 2013

13. Title: **Ribosome localization**
Speaker/Responsible: Suparna Sanyal
Format: Lecture
Keywords: Localization of ribosomes and mRNA, growth conditions and antibiotics
Date: April 8, 2013

Evolution of protein synthesis systems

14. Title: **The genetic code**
Speaker/Responsible: Diarmaid Hughes
Format: Lecture
Keywords: Codon use bias, code evolution
Date: April 15, 2013

15. Title: **Evolution of complexity**
Speaker/Responsible: Dan Andersson
Format: Lecture
Keywords: New genes, macromolecular complexes, selection, neutral evolution
Date: April 22, 2013

Future perspectives

16. Title: **The history and future of structural biology?**
Speaker/Responsible: Anders Liljas
Format: Lecture
Keywords:
Date: April 29, 2013

17. Title: **The ribosome as a target for antibiotics**
Speaker/Responsible: Dan Andersson
Format: Lecture
Keywords: Drug discovery, screening, rational design, resistance mechanisms
Date: May 6, 2013

18. Title: **Translation in synthetic biology**
Speaker/Responsible: Anthony Forster
Format: Lecture
Keywords: Unnatural amino acids, drug discovery, peptidomimetics, translation kinetics.
Date: May 13, 2013

19. Title: **The bright future – Closing remarks**
Speaker/Responsible: Måns Ehrenberg
Format: Lecture
Keywords: Visions and interconnection
Date: May 20, 2013